Form PTO-1449 (modified)

of Patents and Publications for Applicant's

NFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

Atty. Docket No. IOWA:020/MSB Serial No. 09/446,581

Applicant

Pedro J. Alvarez et al.

Filing Date:

Group: Unknown

December 21, 1999 **U.S. Patent Documents Foreign Patent Documents** See Page 1

See Page 1

Other Art

See Page 1

U.S. Patent Documents

| Exam. Init. | Ref. Des. | Document Number | Date | Name | Class | Sub Class | Filing Date of App. |
|----------------|--------------|--------------------|------------|--------|-------|--------------|---------------------|
| FP | A1 | 4,554,101 | 11/19/1985 | Hopp o | | | |

Foreign Patent Documents

| Exam. Init. | Ref. Des. | Document Number | Date | Country | Class | Sub Class | Translation Yes/No |
|----------------|--------------|--------------------|---------|---------|-------|--------------|-----------------------|
| FP | B1 | 52130150 | 11/1/27 | Japan | | | NO |
| FP | B2 | 02/119992 | 5/8/90 | Japan | | | NO |
| FP | В3 | 0522946 | 1/13/93 | Europe | | | NO |
| FP | B4 | 0595441 | 5/4/94 | Europe | | | |

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

| Exam. Init. | Ref. Des. | Citation |
|----------------|--------------|---|
| FP | C1 | Aguilar et al., "Degradation of volatile fatty acids by differently enriched methanogenic cultues: Kinetics and inhibition," Water Res., 29(2):505-509, 1995. |
| FP | C2 | Assaf-Anid et al., "Reductive dechlorination of carbon tetrachloride by cobalmin(II) in the presence of dithiothreitol: Mechanistic study, effect of redox potential and pH," Environ. Sci. Technol., 28(2):246-252, 1994. |
| FP | C3 | Belay and Daniels, "Elemental metals as electron sources for biological methane formation from carbon dioxide," <i>Antonie van Leeuvenhoek</i> , 57(1):1-8, 1990. |
| FP | C4 | Blowes et al., "Passive remediation of groundwater using in situ treatment curtains," In: Geoenvironment 2000: Characterization, Containment, Remediation, and Performance in Environmental Geotechnics, Yalcin BA, Daniel DE, eds., Geotechnical Special Publication No. 46, American Society of Civil Engineers, New York, 2:1608-1621, 1995. |
| P | C5 | Chiu and Reinhard, "Metallocoenzyme-mediated reductive transformation of carbon tetrachloride in titanium (III) citrate aqueous solution," <i>Environ. Sci. Technol.</i> , 29(3):595-603, 1995. |

| EXAMINER: | P. |
|-----------|----|
|-----------|----|

DATE CONSIDERED:

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

List of I

Form PTO-1449 (modified)

List of Patents and Publications for Applicant's

FORMATION DISCLOSURE STATEMENT

MATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

U.S. Patent Documents

See Page 1

Atty. Docket No. IOWA:020/MSB

Serial No. 09/446,581

Applicant

Pedro J. Alvarez et al.

Filing Date: December 21, 1999

Group: Unknown

> Other Art See Page 1

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Foreign Patent Documents

See Page 1

| Exam. Init. | Ref. Des. | Citation | | |
|----------------|--------------|--|--|--|
| FP | C6 | Chiu and Reinhard, "Transformation of carbon tetrachloride by reduced vitamin B ₁₂ in aqueous cysteine solution," <i>Environ. Sci. Technol.</i> , 30:1882-1889, 1996. | | |
| FP | C7 | Daniels et al., "Bacterial methanogenesis and growth from CO ₂ with elemental iron as the sole source of electrons," <i>Science</i> , 237:509-511, 1987. | | |
| FP | C8 | Doong and Wu, "Reductive dechlorination of chlorinated hydrocarbons in aqueous solutions containing ferrous and sulfide ions," <i>Chemosphere</i> , 24(8):1063-1075, 1992. | | |
| FP | C9 | Freedman and Gossett, "Biodegradation of dichloromethane and its utilization as a growth substate under methanogenic conditions," <i>Appl. Environ. Microbiol.</i> , 57(10):2847-2857, 1991. | | |
| FP. | C10 | Gantzer and Wackett, "Reductive dechlorination catalyzed by bacterial transition-metal coenzymes," <i>Environ. Sci. Technol.</i> , 25(4):715-722, 1991. | | |
| 护 | C11 | Gillham and O'Hannesin, "Enhanced degradation of halogenated aliphatics by zero-valent iron," <i>Groundwater</i> , 32(6):958-967, 1994. | | |
| _FP | C12 | Gould, "The kinetics of hexavalent chromium reduction by metallic iron," Water Res., 26:871-877, 1992. | | |
| FP | C13 | Hansen et al., "Abiotic nitrate reduction to ammonium: Key role of green rust," Envir. Sci. Technol., 30(6):2053-2056, 1996. | | |
| FP | C14 | Helland et al., "Reductive dechlorination of carbon tetrachloride with elemental iron," J. Hazard Mater., 41:205-216, 1995. | | |
| FP | C15 | Holliger et al., "A highly purified enrichment culture couples the reductive dechlorination of tetrachloroethylene to growth," Appl. Environ. Microbiol., 59:2991-2997, 1993. | | |
| FP | C16 | Johnson et al., "Kinetics of halogenated organic compound degradation by iron metal." Environ. Sci. Technol., 30:2634-2640, 1996. | | |
| FP | C17 | Lewis, "Factors influencing the stability and properties of green rusts," Advances in GeoEcology, 30:345-372, 1997. | | |
| FP | C18 | Matheson and Tratnyek, "Reductive dehalogenation of chlorinated methanes by iron metal," <i>Environ. Sci. Technol.</i> , 28:2045-2053, 1994. | | |

| | DATE CONSIDERED: | 7/10 | 10 |
|---|------------------|------|----------|
| FXAMINER: INITIAL IE DECEDENCE CONSIDERED | | 110 | <u> </u> |

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

Form PTO-1449 (modified) INFORMATION DISCLOSURE STATEMENT

List of Patents and Publications for Applicant's

Atty. Docket No. IOWA:020/MSB Serial No. 09/446,581

Applicant

Pedro J. Alvarez et al.

(Use several sheets if necessary)

Filing Date: December 21, 1999

Group: Unknown

U.S. Patent Documents See Page 1

Foreign Patent Documents See Page 1

Other Art See Page 1

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

| | | The (morading Addition, Title, Date Fertilient Pages, Etc.) | | |
|----------------|--------------|---|--|--|
| Exam. Init. | Ref. Des. | Citation | | |
| FP | C19 | Matheson and Tratnyek, "Abiotic and biotic processes affecting the dechlorination of chlorinated solvents by zero-valent iron," <i>Abstracts of Papers</i> , 20th ACS National Meeting, American Chemical Society, March 13-17, 1994, Abstract No. 135. | | |
| FP | C20 | Morrison et al., "Coupled Reaction/Transport Modeling of a Chemoical Barrier for Controlling Uranium(VI) contamination in Groundwater," J. Contaminant Hydrology, 17:343-363, 1995. | | |
| KP | C21 | Myneni et al., "Abiotic selenium redox transformations in the presence of Fe(ll,lll) oxides," Science, 278:1106-1109, 1997. | | |
| _FP | C22 | O'Hannesin and Gillham, "In situ degredation of halogenated organics by permeable reaction wall," EPA Groundwater Currents, 542:1-2, 1993. | | |
| _FP | C23 | Olowe et al., "La présence simultanée de rouille verte 2 et de bactéries sulfato-réductrices en corrosion perforante de palplanches en zone portuaire," C.R. Acad. Sci. Paris, t. 314, Série II, pl. 1157-1163, 1992. | | |
| FP | C24 | Orth and Gillham, "Dechlorination of trichloroethylene in aqueous solution using Fe ⁰ ," Environ. Sci. Technol., 30:66-71, 1996. | | |
| P | C25 | Perkins et al., "Effects of electron donors and inhibitors on reductive dechlorination of 2,4,6-trichlorophenol," Water Res., 28(10):2101-2107, 1994. | | |
| FP | C26 | Powell et al., "Coupled iron corrosion and chromate reduction: mechanisms for subsurface remediation," Environ. Sci. Technol., 29:1913-1922, 1995. | | |
| FP | C27 | Powell & Puls, "Proton Generation by Dissolution of Intrinsic or Augmented Aluminosilicate Ninerals for In Situ Contaminant Generation by Zero-Valence-State Iron," <i>Environ. Sci. Technol.</i> 1997, 31 (8), 2244-2251. | | |
| FP | C28 | Reardon, "Anaerobic corrosion of granular iron: measurement and interpretation of hydrogen evolution rates," <i>J. Environ. Sci. Technol.</i> , 29:2936-2945, 1996. | | |
| FP | C29 | Roberts et al., "Reductive elimination of chlorinated ethylenes by zero-valent metals," Environ. Sci. Technol., 30(8):2654-2659, 1996. | | |
| KP | C30 | Stromeyer et al., "Dichloromethane utilized by an anaerobic mixed culture: acetogenesis and methanogenesis," ABSTRACT, Biodegradation, 2(2):129-137, 1991. | | |
| FP | C31 | Sweeny, "The reductive treatment of industrial wastewaters. II process applications," AIChE Symp. Ser., 77:72-78, 1980. | | |

| EXAMINER: | 7 | el | 2 | |
|-----------|---|----|---|--|
|-----------|---|----|---|--|

DATE CONSIDERED:

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

Form PTO-1449 (modified)

JUN 2 2 2001

Atty. Docket No. IOWA:020/MSB

Applicant

Serial No. 09/446,581

List of Patents and Publications

ORMATION DISCLOSURE STATEMENT

Pedro J. Alvarez et al.

(Use several sheets if necessary)

Filing Date: December 21, 1999

Group: Unknown

U.S. Patent Documents

See Page 1

Foreign Patent Documents
See Page 1

Other Art See Page 1

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

| Exam. | Ref. | Citation |
|------------|------|---|
| Init. | Des. | Ottation |
| FP | C32 | Tatara et al., "Effects of medium and trace metals on kinetics of carbon tetrachloride transformation by Psudomonas sp. strain KC," Appl. Environ. Microbiol., 59(7):2126-2131, 1993. |
| _FP | C33 | Thiel, "The effect of methane analogues on methanogenesis in anaerobic digestion," Water Res., 3:215-223, 1969. |
| _FP | C34 | Till et al., "Fe(0)-supported autotrophic denitrification," Environ. Sci. Technol., 32(5), 634-639, 1998. |
| FP | C35 | Trolard et al., "Mise en évidence d'un constituant de type << rouilles vertes << dans les sols hydromorphes. Proposition de l'existence d'un nouveau minéral: la << fougérite >>," Trolard, Abdelmoula, Bourrié, Humbert and Génin," C.R. Acad. Sci. Paris, t. 323, série ll a, p. 1015-1022, 1996. |
| <u> </u> P | C36 | Vidic and Pohland, "Treatment Walls", Groundwater Remediation Technologies Analysis Center, Technology Evaluation Report TE-96-01. Uiniversity of Pittsburgh, Pittsburgh, PA, October 1996. |
| FP | C37 | Weathers et al., "Chloroform cometabolism by a methanogenic consortium utilizing zero-valent iron as ultimate electron donor," Abst. Gen. Meet. Am. Soc. Microbiol., 95(0):399, 1995. |
| FP | C38 | Weathers, "Biological and metallic iron-promoted transformations of carbon tetrachloride and chloraform under methanogenic conditions," Ph.D. Dissertation, University of Iowa, 1995. |
| FP | C39 | Weathers et al., "Methanogens couple anaerobic Fe(0) oxidation and CHCl ₃ reduction," Abst. Papers Am. Chem. Soc, 209(1-2):ENVR225, 1995. |
| PP P | C40 | Wild et al., "Anaerobic dechlorination of trichloroethene, tetrachloroethene and 1,2-dichloroethane by an acetogenic mixed culture in a fixed-bed reactor," ABSTRACT, Biodegradation, 6(4):309-318, 1995. |
| FP | C41 | Wong and Neumann, "Electric field mediated gene transfer," Biochim. Biophys. Res. Commun., 107(2):584-587, 1982. |
| _ Fp | C42 | Yamamoto et al., "Kinetics and modeling of hexavalent chromium reduction in Enterobacter cloacae," Biotechnol. Bioeng., 41:129-133, 1993. |
| CP | C43 | Yang and Speece, "The effects of chloroform toxicity on methane fermentation," Water Res., 20(10):1273-1280, 1986. |

| Examiner: \checkmark | 10 |
|------------------------|-----|
| <u> </u> | m F |

DATE CONSIDERED:

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.